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**Dorosenco**

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(54) **POWER TRACKER FOR MULTIPLE TRANSMIT SIGNALS SENT SIMULTANEOUSLY**

(71) Applicant: **QUALCOMM Incorporated**, San Diego, CA (US)

(72) Inventor: **Alexander Dorosenco**, San Diego, CA (US)

(73) Assignee: **QUALCOMM INCORPORATED**, San Diego, CA (US)

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See application file for complete search history.

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*Primary Examiner* — Shawkat M Ali
(74) *Attorney, Agent, or Firm* — Haynes and Boone, LLP

(57) **ABSTRACT**

Techniques for generating a power tracking supply voltage for a circuit (e.g., a power amplifier) are disclosed. The circuit may process multiple transmit signals being sent simultaneously on multiple carriers at different frequencies. In one exemplary design, an apparatus includes a power tracker and a power supply generator. The power tracker determines a power tracking signal based on inphase (I) and quadrature (Q) components of a plurality of transmit signals being sent simultaneously. The power supply generator generates a power supply voltage based on the power tracking signal. The apparatus may further include a power amplifier (PA) that amplifies a modulated radio frequency (RF) signal based on the power supply voltage and provides an output RF signal.

**33 Claims, 10 Drawing Sheets**